以注意力基礎觀點論廣告投資與美國交叉上市之股票報酬

An Attention-Based View of Advertising Investment and Stock Return of Cross-Listings

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摘要

　　本研究以注意力觀點理論來探討廣告投資如何影響股票報酬。廣告投資不僅能創造無形資產亦能同時吸引投資人的目光。實證結果中，首先，廣告投資確實能吸引投資人的注意力進而創造正向股票投資報酬。其次，從開發中國家至美國交叉上市的公司及高科技至美國交叉上市公司亦能擁有正向的股票報酬。最後，若開發中國家至美國交叉上市的公司及高科技至美國交叉上市的公司，若投入越多的廣告支出，則能得到更高的正向股票報酬。尤其，那些來自開發中國家的高科技公司至美國交叉上市，經由廣告投資更能獲得更高的正向股票報酬。從管理意涵的角度，本研究建議經理人應該增加廣告投資來建立無形資產，降低資訊不對稱問題，進而吸引投資者。

關鍵詞：注意力基礎觀點，廣告投資，投資人，股票報酬

Abstract

　　This study uses an attention-based view (ABV) to investigate how advertising investment influences stock returns. The advertising expenditures can not only create the intangible investment but also to catch the attention of investors. In these empirical results, first, the advertising investment can engage the investor's attention to create the positive stock return. Secondly, the cross-listing firms from emerging countries and high-tech cross-listing firms bring the positive performance. Finally, cross-listing firms from emerging countries and high-tech cross-listing firms with more advertising expenditures own the positive impact on stock return. In particular, the high-tech cross-listing firms from the emerging countries have the positive stock return through advertising investments. For the managerial implication, the manager should increase advertising investments to build intangible assets and attract the attention of investors since less asymmetric information.

Keywords: Attention-based View, Advertising Investment, Investor, Stock Return

1. Introduction

Cross-listings do not only provide firms with access to cheap funding (Merton, 1987; Sundaram & Logue, 1996), but also give investors with an incentive to have stocks of these firms because of the enhanced liquidity and the high valuation (Eun & Sabherwal, 2003; Foucault & Gehrig, 2008). In addition, an investor acquires additional information about the firm before deciding to purchase the stock (Foerster & Karolyi, 1999; Hauser & Lauterbach, 2003). However, when an unfamiliar foreign company operates cross-listings in the U.S., there will be an asymmetric information problem between the investor and cross-listing firm, because the investor does not get the information about the cross-listing firm. There is one solution to this situation. Advertising can reduce this information asymmetry between cross-listing firms and investors. In particular, these firms can improve the impact of cross-listings and avoid releasing incorrect or false information through advertising because of strong shareholder protections in corporate governance (Denis & McConnell, 2003; Kalcheva & Lins, 2007; Laeven & Levine, 2008).

There are different various ways of foreign firms to cross-list their shares on the U.S. exchanges. These cross-listings are generally finished in the financial intermediary of American Depositary Receipts (ADRs). In particular, from emerging markets, the most popular financial intermediary for cross-listings is the ADR. ADRs are negotiable certificates to have the ownership of shares in these foreign firms. The financial intermediary holds the original shares denominated in the home country currency and then, issues U.S. shares denominated in U.S. dollars. In accordance with U.S. clearing and settlement conventions, they can be quoted, traded, and pay dividends in U.S. dollars. Those smaller ADRs are traded in the "Over The Counter" (OTC) market as private-placement issues according to U.S. Securities Exchange Commission (SEC) Rule 144A. These OTC listings are limited illiquid and Rule 144A issues only trade among qualified institutional buyers on the "Private Offerings, Resale and Trading through Automated Linkages" (PORTAL) system.

In general, ADRs can be categorized into three levels. Level I ADRs can be quoted on the Nasdaq pink sheets with the minimal SEC registration and these

registered firms are not allowed to raise capital in the U.S. financial market. They are typically highly speculative. Level II ADRs can be used to establish a trading presence on stock exchanges, and they can't be used to raise capital. Level II ADRs have more requirements from the SEC than do Level I ADRs, and they can get higher visibilities and trading volumes. Level III ADRs are the most prestigious of the three ADR levels. They can be used to build substantial trading presences and raise capital for foreign firms in the U.S. financial market. They should be subject to full reporting for the SEC requirements. Level II ADRs and Level III ADRs disclose financial statements to be similar to U.S. domestic firms in accordance with U.S. Generally Accepted Accounting Principles (GAAP). (Baker et al., 2002; Lang et al., 2003).

This study concentrates on cross-listings of firms and investigates the advertising expenditure intensity (ADI) of firms. According to Attention-Based View (ABV) in Ocasio (1997) and Barnett (2008), the awareness of investor drives managerial focus on particular issues, and thus influences the allocation of a firm's investments. An investor can identify the operation and product of firms to improve the evaluation of firms (Joshi & Hanssens, 2010; Kim & McAlister, 2011). These firms can increase the allocation of advertising investment to meliorate their awareness and evaluation (Bayus et al., 2003; Luo & Donthu, 2006). While these investment decisions of managers affect investor attention positively, advertising can supply to attract investors such that managers are willing to increase investment. Thus, advertising investments can ameliorate the asymmetric information problem and further, accumulate intangible assets of firms.

It is important how to influence investor attention by a behavioral decision. Men are willing to involve in risk situation when they feel more confident and have superior knowledge (Heath & Tversky, 1991; Graham et al., 2009). When investors faced with a very familiar investment, they often forget the principles of portfolio theory and make investment decision thoughtlessly (Chen et al., 2004; Reuer & Ragozzino, 2014). In this behavioral perspective, familiarity is an obvious factor, and it is also important for investors to make the investment. If a firm is familiarized with investors through more advertising, investors will believe that they have access to superior information and do not follow the principles in

portfolio theory. Thus, when advertising leads to increased familiarity, the advertising investment will be considered as an intangible investment and investors are likely to improve the evaluation of firm.

This study finds that cross-listing firms can invest the advertising expenditures to determine the attention of investors and further, create the positive stock returns. Investors consider that they have superior information in holding the stock of a familiar firm rather than diversification of stocks in some unfamiliar firms. Some results are found in this study. First, advertising expenditures can significantly bring the positive stock returns. Second, cross-listing firms from emerging countries have positive performances. Third, high-tech cross-listing firms have positive excess stock returns. Fourth, cross-listing firms from emerging countries can advertise to improve their visibilities and financial performances. Finally, high-tech cross-listing firms from emerging countries rise firm recognition and get better performances by advertisement. Not only do such firms accumulate intangible assets, but they also have better expectations on stock returns and engage investors through advertising investment, because this investment of advertisement reduces asymmetric information between the investor and cross-listing firm. These results suggest that managers of cross-listing firms should increase advertising expenditure to engage investor awareness effectively.

The remainder of this study is arranged as follows. Section 2 reviews the literature and develops the hypothesis. Section 3 describes the sample data and presents the methodology. Section 4 discusses the results, and Section 5 concludes with relevant findings.

2. LITERATURE REVIEW AND HYPOTHESIS

2.1 Attention-Based View

This study adopts the attention-based view (ABV) in the context of behavioral decision-making (Ocasio, 1997; Barnett, 2008). There are two kinds of actions including issues and answers for the definition of attention. For example, issues are noticing, encoding, interpreting, and focusing on problems, opportunities, and threat

for making sense of the environment; the answers are for the available action alternatives in the form of proposals, routines, projects, programs, and procedures in ABV (Ocasio, 1997; Barnett, 2008). Investors can selectively notice, interpret, and consciously consider aspects of the environment that they believe to be relevant to the successful fulfillment of the organizational function because they are bounded in their capabilities to engage with environmental stimuli (Ocasio, 1997; Barnett, 2008; McMullen et al., 2009). Individuals working at different levels in an organization each selectively process information in this manner. Investors are concerned about the different activities of firms or communications of managers. Accordingly, managers allocate their resources based on the attention of investors, dependent on whether investors notice the organizational behavior that communicates the need for organizational action. This study uses the ABV to explain advertising investments. As a signal, cross-listings publicly disclose information about a firm and provide investors with an incentive to hold stock since the corporate governance of the cross-listing firm is improved (Denis & McConnell, 2003; Miguel et al., 2004). These firms can not only gain access to cheap capital by cross-listing (Merton, 1987; Sundaram & Logue, 1996) but also to provide these incentives of the enhanced liquidity and the high valuation (Eun & Sabherwal, 2003; Foucault & Gehrig, 2008). Corporate governance can be improved because strong shareholder protections are available under U.S. law (Denis & McConnell, 2003; Kalcheva & Lins, 2007; Laeven & Levine, 2008). Therefore, cross-listings enable firms to allocate resources effectively and improve shareholder protections. Besides, firms release correct information through advertising rather than false information under strong shareholder protections in U.S. law. This, in turn, attracts investors.

2.2 Advertising Investment

Firms can increase advertisement to release the quantity and quality of the information related to firms in the market. A potential investor has to own additional knowledge of a firm before deciding to purchase its stock (Foerster & Karolyi, 1999; Hauser & Lauterbach, 2003). These investors are aware of the signal of cross-listing and simultaneously experience information asymmetry because cross-listing firms are almost unfamiliar foreign firms. The firm value is built on

improving awareness and cultivating favorable investor attitudes (Joshi & Hanssens, 2010; Kim & McAlister, 2011). Advertising investments can improve firm awareness further to increase firm value (Bayus et al., 2003; Luo & Donthu, 2006). Consequently, the advertisement can create high recognition of cross-listing firms to solve the asymmetric information problem effectively.

In addition to the complexities related to different buying and selling decisions, investors are faced with another problem how to choose from thousands of stocks (Odean, 1999; Doskeland & Hvide, 2011). This behavioral decision provides support for the advertising effect. Individuals are willing to get risks when they have superior knowledge about the uncertainties involved (Heath & Tversky, 1991; Graham et al., 2009). Such preferences can apply to investment decisions such that investors may prefer to choose branded stocks due to the high flow of public information. Consequently, investors readily ignore the principles of portfolio theory while investing in these familiar firms (Chen et al., 2004; Reuer & Ragozzino, 2014). These familiar firms make investors to forgo the advantages of diversification, but concentrate on a small number of companies. This reflects the tendency of individuals to be optimistic about and charitable toward what they feel comfortable and familiar with (Heath & Tversky, 1991; Graham et al., 2009). Therefore, firms are willing to spend more on advertising in order to gain increased investor attention (Grullon et al., 2004) or to increase the visibility of a firm (Gervais et al., 2001; Kao, 2016; Kujur & Singh, 2017). People likely invest in the familiar stocks while often ignoring the principles of portfolio theory (Huberman, 2001). Familiarity is obviously a nonfinancial attribute that can affect an investor's decision, and if advertising makes investors more familiar with the related securities, they are likely to pay more attention to a firm and believe that they possess superior information regarding this firm. Besides, Massa & Simonov (2006) also consider that investors make their stock portfolios which are very closely related to them. The nature of familiarity shows that it is information based. The familiarity-driven behavior is a way of information source for investors. If investors are concerned about these forthcoming cross-listing firms, they will likely choose the familiar one with information disclosure based on advertising. As a result, if advertising investment leads to increased visibility or familiarity, the improved recognition of a

firm will reduce the information asymmetry effectively. It is thus expected that managers will increase investment in advertising expenditures to decrease the asymmetric information problem. Investors can become aware of, and familiarized with, cross-listing firms by advertisement. Thus, investors feel so confident that they hold superior information and have an incentive to buy or hold stock of a familiar cross-listing firm. To avoid the effect of firm scale on these expenditures, this study adopts advertising expenditure intensity (ADI) to proxy the advertising investment (Luo & Donthu, 2006; McAlister et al., 2007). Based on this, the following hypothesis is proposed:

Hypothesis: The advertising expenditure intensity (ADI) of cross-listing firms is positively related to stock returns.

3. SAMPLE SELECTION AND METHODOLOGY

3.1 Sample Selection

This study collected the sample of cross-listing firms from 2000 to 2009 in the Bank of New York Global Equity Investing Depositary Receipt Services. These sample firms are traded on the New York Stock Exchange (NYSE), American Stock Exchange (AMEX), NASDAQ, and they are all registered in SEC. This study investigates the effects of the cross-listing behavior of firms on their performance. To avoid other effects, thus excluding: (1) firms that trade Level I ADR (OTC) and privately placed and offshore ADR (SEC Rule 144A/Regulations); and (2) cross-listing firms if their financial information is unavailable from the Center Research in Securities Prices (CRSP) and Compustat databases (Chen et al., 2005; Brandt et al., 2009).

3.2 Methodology

The stock response model in this study is to assess the degree to which the marketing activity, for example, advertising spending, in the market improves cash flows and elevates stock returns. The stock return response model can provide the

measure related to the expectations of cash flows, stock prices, and stock returns in the future due to the changes of advertising expenditures (Pauwels et al., 2004; Srinivasan et al., 2009; Osinga et al., 2011; Rubera & Kirca, 2012). It can establish an estimation of stock returns by specifying a model whether the information contained in to prove the hypothesis. The long run stock return to an action of advertising marketing is also obtained (Pauwels et al., 2004; Osinga et al., 2011; Rubera & Kirca, 2012). It considers marketing activities, for instance, the advertising spending accumulating intangible assets, influences the future cash flows of a firm. For example, the value of an advertising marketing strategy to a firm can be depicted as a discounted present value of the future cash flows generated through the advertising marketing strategy (Swaminathan et al., 2008; Rubera & Kirca, 2012). The stock market valuation of the firm depicts the market expectations of the discounted future cash flows. The efficient market hypothesis considers that the current stock price reflects all known information about future earnings prospects (Carhart, 1997). Thus, investors will expect a better valuation of firm when it increases the level of advertising expenditure for intangible assets.

In the studies of finance literature, the four-factor explanatory model uses the expected returns ($ExpRet_{it}$) as a function of risk factors that estimate the general stock market, size, the relative importance of intangible assets (book to market ratio), and momentum (Carhart, 1997). The financial model for stock returns is built as following:

$$R_{it} - R_{rf,t} = \alpha_i + \beta_i * (R_{mt} - R_{rf,t}) + s_i * SMB_t + h_i * HML_t + u_i * UMD_t + \varepsilon_{it}, (1)$$

where R_{it} is the stock return for firm i in period t, $R_{rf,t}$ is the risk-free rate of return in period t, R_{mt} is the average market rate of return in period t, SMB_t is the return on a value-weighted portfolio of small stocks less the return of big stocks, HML_t is the return on a value-weighted portfolio of high book to market stocks less the return on a value-weighted portfolio of low book to market stocks, and UMD_t is the average return on the two high prior return portfolios less the average return on the two low prior return portfolios (i.e., momentum). Moreover, ε_{it} is the error term; α_i is the intercept term; and β_t, s_i, h_i, and u_i are parameter estimates of the four factors used in the model. The SMB and HML factors are constructed

using portfolios based on size and book to market, and UMD factor is constructed using portfolios based on the prior 2 to 12 month returns. If the firm performance is normal, the four-factor model captures the variation in R_{it}, and α_i is zero.

This provides the financial model with a marketing variable to test the hypothesis regarding the impact of stock returns on future cash flows (Srinivasan et al., 2009). This study defines the financial model with advertising investment as following:

The partial focal model: the marketing variable (ADI)

$$
\begin{aligned}
R_{it} - R_{rf,t} = {} & \beta_0 + \beta_1 ExpRet_{it} + \beta_2 \Delta EAR_{it} + \beta_3 \Delta REV_{it} + \beta_4 ADI_{it} \\
& + \gamma_1 \Delta EAR_{it} * ADI_{it} + \gamma_2 \Delta REV_{it} * ADI_{it} + \varepsilon_{it}
\end{aligned}
, (2)
$$

The full focal model: the marketing variable, other controlled variables, and interactions

$$
\begin{aligned}
R_{it} - R_{rf,t} = {} & \beta_0 + \beta_1 ExpRet_{it} + \beta_2 \Delta EAR_{it} + \beta_3 \Delta REV_{it} + \beta_4 ADI_{it} + \beta_5 EME + \beta_6 HIT \\
& + \gamma_1 \Delta EAR_{it} * ADI_{it} + \gamma_2 \Delta REV_{it} * ADI_{it} \\
& + \gamma_3 \Delta EAR_{it} * ADI_{it} * EME + \gamma_4 \Delta REV_{it} * ADI_{it} * EME \\
& + \gamma_5 \Delta EAR_{it} * ADI_{it} * HIT + \gamma_6 \Delta REV_{it} * ADI_{it} * HIT \\
& + \gamma_7 \Delta EAR_{it} * ADI_{it} * EME * HIT + \gamma_8 \Delta REV_{it} * ADI_{it} * EME * HIT + \varepsilon_{it}
\end{aligned}
, (3)
$$

where R_{it} is the stock return for firm i in period t and $ExpRet_{it}$ is the expected return in equation 1. The unexpected components of stock returns are two categories: the result and the action. The results include unanticipated accounting earnings (ΔEAR_{it}, item number_11 of Compustat) and revenues (ΔREV_{it}, item number_172 of Compustat). The ADI equals advertising spending (item number_45 of Compustat) per dollar of sales (item number_12 of Compustat) for the fiscal year prior to the cross-listing year (Luo & Donthu, 2006; McAlister et al., 2007). The emerging country variable (EME) equals one if the firm comes from an emerging country and zero otherwise (Baker et al., 2002; King & Segal, 2009), and the high-tech variable (HIT) (Pagano et al., 2002; Halling et al., 2008). The full focal model includes the possibility for interactions of the marketing variable with the other controlled variables. This study uses residuals from a time-series model as the estimates of the unanticipated components.

In the stock return response models, a test of unexpected changes to firm results and the firm action is the significance of β and γcoefficients. Significant values imply that these variables provide information in explaining stock returns. In fact, this study uses a fixed-effect cross-sectional time-series panel model to control for firm characteristics. It tests for pooling versus estimating a fixed-effect cross-sectional panel model to evaluate the significance of the cross-section effects using the sums of squares in F tests (Swaminathan et al., 2008; Srinivasan et al., 2009; Rubera & Kirca, 2012).

This study obtains stock returns of firms from CRSP in the cross-listing year. The data source for the four factors is Kenneth French's Web site at Dartmouth. For firm specific and quarterly accounting information, such as accounting earnings and revenues, the Compustat database is utilized. This study selects the week as the time interval of analysis. Because the stock market reacts only to unexpected information, explanatory factors should only reflect unanticipated changes. To obtain the measure of unanticipated changes, the time-series model uses the residuals as the estimates of unanticipated components.

4. EMPIRICAL RESULTS

4.1 Summary Statistics

Table 1 provides the country of the ADR program sample firms. There are 215 cross-listing firms, 154 (72%) for NYSE, 59 (27%) for NASDAQ, and 2 (1%) for AMEX. Thirty countries are represented in the sample, and China, with 70 (33%), has the largest number of firms. Panel B of Table 1 provides a summary of the firms' characteristics. The mean (median) cross-listing firm has an advertising expenditure intensity of 5.64 (5.32) percent. The mean (median) of company has a market value $324 (102) million, stock price $12.25 (10.12), emerging dummy of 0.67 (1), and high-tech dummy of 0.63 (1).

Table 1: Sample statistics of 215 ADR programs in the period 2000-2009

Panel A: Country	Exchange and number of cross-listings			
	NYSE	NASDAQ	AMEX	Total
Argentina	8	2	0	10
Australia	3	2	1	6
Belgium	2	0	0	2
Brazil	20	1	0	21
Chile	5	0	0	5
China	35	35	0	70
Colombia	1	0	0	1
Denmark	0	1	0	1
France	3	0	0	3
Germany	4	0	0	4
Greece	1	0	0	1
Hong Kong	2	3	0	5
India	11	1	0	12
Ireland	3	0	0	3
Israel	0	1	0	1
Italy	2	1	0	3
Japan	7	0	0	7
Jersey	0	1	0	1
Korea	5	1	0	6
Luxembourg	0	1	0	1
Mexico	8	3	0	11
Netherlands	3	1	0	4
New Zealand	1	0	0	1
Norway	1	1	0	2
Russia	3	0	0	3
Spain	1	0	0	1
Switzerland	5	1	0	6
Taiwan	4	3	0	7
Turkey	1	0	0	1
United Kingdom	15	0	1	16
Total	154	59	2	215

Panel B: Characteristics	Maximum	Minimum	Mean	Median	S. D.	Number
ADI (%)	12.03	2.27	5.64	5.32	2.35	215
Market value (million $)	852	57	324	102	458	215
Stock price($)	53.11	2.28	12.25	10.12	18.37	215
Emerging (EME)	1	0	0.67	1	0.26	145
High-tech (HIT)	1	0	0.63	1	0.28	135

Note: Panel A presents ADRs listed on NYSE, NASDAQ, and AMEX. Panel B provides the characteristics of the cross-listing firms. ADI is advertising spending per dollar of sales for the fiscal year prior to the cross-listing year (McAlister et al., 2007). The market value of the equity is the number of shares outstanding multiplied by the share price (Grullon et al., 2004). The emerging variable (EME) equals one if the firm comes from an emerging country, and zero otherwise (Baker et al., 2002; King & Segal, 2009). The high-tech variable (HIT) is from Pagano et al. (2002) and Halling et al. (2008).

Data source: This research

4.2 Results of Financial Models

In this study, the stock return models are statistically significant at p<0.05 or 0.01 for the four-factor financial model, the partial focal model, and the full focal model, respectively.

4.2.1 Four-factor model

The four-factor financial model in Table 2 is statistically significant (F value is 2.286, p<0.05) with adjusted R-square of 0.168. The coefficient of intercept (0.284, p<0.10) is significantly positive. This means that the stock return of cross-listing firms is positive. The market risk coefficient ($R_m - R_f$) is significantly positive (0.284, p<0.10). The coefficient of size risk (SMB) is positive and significant (0.162, p<0.10), and the coefficient of value risk (HML) is significantly positive (0.236, p<0.05). However, the momentum variable (UMD) does not significantly explain stock returns. Thus, these results confirm that small caps and stocks with a high book to market ratio tend to be better than the market.

4.2.2 The partial focal model

The partial focal financial model of Table 2 includes the addition of firm action (ADI) and firm results (ΔEAR and ΔREV). The partial focal financial model in Table 2 is statistically significant (F value is 3.856, p<0.01) with adjusted R-square of 0.347. The coefficient for the intercept (0.356, p<0.05) is significantly positive, representing a positive stock return for cross-listing firms. For these factors, the market risk coefficient ($R_m - R_f$) is significantly positive (0.387, p<0.05). The coefficient for the size risk (SMB) is significantly positive (0.193, p<0.10), and the coefficient for the value risk (HML) is significantly positive (0.263, p<0.05). However, the coefficient for the momentum (UMD) is not significantly positive. The coefficient of firm action (ADI) is significantly positive (0.438, p<0.05). This supports the hypothesis and demonstrates that the ADI significantly and positively influences the stock return. In addition, the coefficient of accounting earnings (ΔEAR) is significantly positive (1.847, p<0.05), and the coefficient of revenues (ΔREV) is also significantly positive (0.426, p<0.05). For the interactions, the coefficient of $\Delta EAR * ADI$ is significantly positive (0.873, p<0.05) and the

coefficient of $\Delta REV * ADI$ is also significantly positive (0.363, p<0.05). In fact, the firm action and firm results significantly affect stock returns beyond the four factors.

4.2.3 The full focal model

In the full focal financial model of Table 2, advertising expenditure increases firm action, firm results, and firm characteristics. The full focal financial model in Table 2 is statistically significant (F value is 4.568, p<0.01) with adjusted R-square of 0.483. The sums of squares F-test and the likelihood function test statistics for pooling versus fixed effects reject the null that the fixed effects are redundant (p<0.05). This study tests for autoregressive conditional heteroskedasticity (ARCH) in the residuals using Engle's Lagrange-multiplier ARCH test (Engle, 1982; Van Dijk et al., 1999; Brown & Ong, 2001) and fails to reject the null hypothesis of no ARCH (p<0.01).

The coefficient for the intercept (0.438, p<0.01) is significantly positive. This means that cross-listing firms have positive stock returns. For the four factors, the coefficient of ($R_m - R_f$) is significantly positive (0.396, p<0.01). The coefficient of SMB is significantly positive (0.222, p<0.10), and the coefficient of HML is significantly positive (0.271, p<0.05). However, the coefficient of UMD is insignificantly positive. In addition, the coefficient of ADI is significantly positive (0.475, p<0.01). This also supports the hypothesis that the ADI has a significantly positive influence on the stock return. For firm characteristics, the coefficient of EME is significantly positive (0.386, p<0.05), and the coefficient of HIT is also significantly positive (0.357, p<0.05). For firm results, the coefficient of ΔEAR is significantly positive (1.924, p<0.05), and the coefficient of ΔREV is also significantly positive (0.445, p<0.05).

Moreover, for the interactions, the coefficient of $\Delta EAR * ADI$ is significantly positive (0.885, p<0.05) and the coefficient of $\Delta REV * ADI$ is significantly positive (0.387, p<0.05). Moreover, the coefficients of $\Delta EAR * ADI * EME$ and $\Delta REV * ADI * EME$ are significantly positive (0.486, p<0.05; 0.325, p<0.10); the coefficients of $\Delta EAR * ADI * HIT$ and $\Delta REV * ADI * HIT$ are significantly positive (0.513, p<0.05; 0.424, p<0.10); and the coefficients of $\Delta EAR * ADI * EME * HIT$ and

$\triangle$REV ＊ADI ＊EME ＊HIT are significantly positive (0.772, p<0.05; 0.653, p<0.05). Indeed, firm action, firm results, and firm characteristics significantly and positively influence stock returns beyond the four factors.

Table 2: Cross-sectional analysis of stock return response models

	Four-factor model		Partial focal model		Full focal model	
	Coefficient	S. E.	Coefficient	S. E.	Coefficient	S. E.
Four-factor						
Intercept	0.284+	0.152	0.356*	0.165	0.438**	0.187
$R_m - R_f$	0.315+	0.186	0.387*	0.179	0.396**	0.163
SMB	0.162+	0.094	0.193+	0.108	0.222+	0.131
HML	0.236*	0.118	0.263*	0.123	0.271*	0.136
UMD	0.081	0.053	0.084	0.062	0.077	0.058
Firm action						
ADI			0.438*	0.197	0.475**	0.201
Firm characteristics						
EME					0.386*	0.183
HIT					0.357*	0.159
Firm results						
$\triangle$EAR			1.847*	0.856	1.924*	0.934
$\triangle$REV			0.426*	0.192	0.445*	0.198
$\triangle$EAR ＊ADI			0.873*	0.417	0.885*	0.423
$\triangle$REV ＊ADI			0.363*	0.164	0.387*	0.171
$\triangle$EAR ＊ADI ＊EME					0.486*	0.226
$\triangle$REV ＊ADI ＊EME					0.325+	0.173
$\triangle$EAR ＊ADI ＊HIT					0.513*	0.261
$\triangle$REV ＊ADI ＊HIT					0.424+	0.252
$\triangle$EAR ＊ADI ＊EME ＊HIT					0.772**	0.321
$\triangle$REV ＊ADI ＊EME ＊HIT					0.653**	0.264
Durbin-Watson statistic for serial correlation	2.243		3.034		3.867	
Adj-R square	0.168		0.347		0.483	
F value	2.286		3.856		4.568	
Number	215		215		215	

Note: +, *, and ** indicate the 0.10, 0.05, and 0.01 significance levels, respectively (two-sided).

Data source: This research

4.3 Robustness Test of Endogeneity

This study finds the positively relationship between advertising investment and stock return. However, managers have to consider investors' behaviors in their actions because there be possibly a "reverse causality" between marketing and stock return (Chakravarty & Grewal, 2011). The advertising investment is determined endogenously in the reverse-causation situation and therefore, it is investigated through the Wu-Hausman test (Gielens & Dekimpe, 2001; Weigelt, 2009). For the potentially endogenous problem, it is undertaken by this process. It includes the variable and its instruments which are derived from instrumental variables (2SLS) regression. The Chi-square test on the significance of these instruments solves the endogeneity test. It rejects that the hull hypothesis is exogenous (the significance level is p<0.05). It means that ADI is exogenous and the specification of model is robust.

5. CONCLUSION

Unlike previous studies (Sundaram & Logue, 1996; Eun & Sabherwal, 2003; Doidge et al., 2004) that focus on capital costs and information disclosure, this study uses the ABV to explain advertising investments of cross-listing firms. The primary conclusions are as follows. First, the advertising investment of cross-listing firms can attract investor attention to improve stock returns. Second, cross-listing firms from emerging countries with advertising have positive impacts on firm performance. Third, high-tech cross-listing firms display positive firm performance due to advertising. Fourth, cross-listing firms from emerging countries with advertising investment exhibit positive impacts on stock returns. Fifth, high-tech cross-listing firms with advertising investment have positive effects on stock returns. Finally, high-tech cross-listing firms from emerging countries that increase advertising expenditures have positive impacts on stock returns. Thus, it is apparent that investors will not familiarize themselves with cross-listing firms until these firms increase advertising expenditures, since advertising significantly influences the attention.

5.1 Implications

These findings provide several implications for management research and practice. This study investigates the stock return impact of: (1) advertising investment; (2) emerging country; (3) high-tech industry; (4) the interaction effect of advertising investment and emerging country; (5) the interaction effect of advertising investment and high-tech industry; and (6) the interaction effect of advertising investment, emerging country, and high-tech industry. This study supports the positive relationships between firm action, firm characteristics, and stock market valuation. Future researchers can track the advertising investment, determine the outcomes of advertising investment decisions, and attempt to assess when and by how much market valuation changes.

Regarding the expectation of advertising expenditures, the results firstly demonstrate that advertising causes an investor's response through a net increase in income and revenue. This reveals that advertising investment has a double impact on firm value, demonstrating that advertising investment can not only have positive impacts on earnings and revenues, but also create positive effects on stock returns. Similarly, there are direct and indirect effects from advertising investment (Joshi & Hanssens, 2010; Kim & McAlister, 2011). This implies that managers should be cognizant of impacts due to advertising. Because managers increase the level of advertisement for an intangible asset (namely familiarity), it is simple enough for managers to attract the attention of investors even if there is no tangible consumer impact. Second, from an economic standpoint, the object of corporate strategy is the selection of countries or industries in which to participate and to better valuate in the market. Thus, there is another motivation for managers in high-tech industries or emerging countries to spend specific intangible investments to gain investors' interests and attentions. Similarly, there are positive firm performance effects when cross-listing firms are high-tech industries or from emerging countries (Baker et al., 2002; Pagano et al., 2002; Halling et al., 2008; King & Segal, 2009). Specifically, the results suggest that managers of high-tech cross-listing firms from emerging countries should increase advertising expenditure to gain the attention of investor, since the purpose of business strategy is to achieve a differential advantage over other

competitors from other regions or industries.

5.2 Limitations

There are several limitations in this study. First, it only considers the one-sided behavior of firms in the product market, without considering the actions of their rivals. The assumption in this work is thus that these advertising expenditures are not influenced by the spending of competitors. However, in the real world, firms are often influenced by the actions of their rivals. Second, this study only examines the static competition. Finally, this study only presents the short-term results, and in practice it is important to consider changes in advertising spending over the long term. Thus, future research should address these limitations. First, it should investigate how changes in the advertising expenditures of cross-listing firms influence their performance in the long term. Second, it should also examine the interactional impact of rivals in the long term.

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